LISTING OF CLAIMS:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-8 (Canceled).

- 9. (Previously presented) A method of detecting the presence of 2-chlorophenol in a test sample, comprising
 - (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2-chlorophenol relative to wild type DmpR, and
 - (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2-chlorophenol in the test sample.

- 10. (Previously presented) The method according to claim 9, wherein the DmpR mutant is selected from the group consisting of DmpR-B21, DmpR-B23, and DmpR-D9.
- 11. (Previously presented) A method of detecting the presence of 2,4-dichlorophenol in a test sample, comprising
 - (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a

mutation in the sensor domain conferring an enhanced transcriptional activation response to 2,4-dichlorophenol relative to wild type DmpR, and

(b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2,4-dichlorophenol in the test sample.

- 12. (Previously presented) The method according to claim 11, wherein the DmpR mutant is selected from the group consisting of DmpR-B21, DmpR-B17#2, DmpR-B9 and DmpR-D12.
- 13. (Previously presented) A method of detecting the presence of 2,4-dimethylphenol in a test sample, comprising
 - (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2,4- dimethylphenol relative to wild type DmpR, and
 - (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2,4-dimethylphenol in the test sample.

- 14. (Previously presented) The method according to claim 13, wherein the DmpR mutant is DmpR-B31.
- 15. (Previously presented) A method of detecting the presence of 2-nitrophenol in a test sample, comprising

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- (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 2-nitrophenol relative to wild type DmpR, and
- (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 2-nitrophenol in the test sample.

- 16. (Previously presented) The method according to claim 15, wherein the DmpR mutant is DmpR-D9.
- 17. (Previously presented) A method of detecting the presence of 4-nitrophenol in a test sample, comprising
 - (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to 4-nitrophenol relative to wild type DmpR, and
 - (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of 4-nitrophenol in the test sample.

18. (Previously presented) The method according to claim 17, wherein the DmpR mutant is DmpR-B31.

- 19. (Previously presented) A method of detecting the presence of phenol in a test sample, comprising
 - (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to phenol relative to wild type DmpR, and
 - (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of phenol in the test sample.

- 20. (Previously presented) The method according to claim 19, wherein the DmpR mutant is DmpR-B9.
- 21. (Previously presented) A method of detecting the presence of one or more phenolic compounds selected from the group consisting of phenol, 2-chlorophenol, 2,4-dimethylphenol, 2-nitrophenol and 4-nitrophenol in a test sample, comprising
 - (a) culturing *Pseudomonas or Escherichia coli* bacteria in the presence of the test sample, said bacteria containing a DmpR gene and a reporter gene under the control of a promoter inducible by DmpR, said DmpR gene containing a mutation in the sensor domain conferring an enhanced transcriptional activation response to the phenolic compound(s) relative to wild type DmpR, and
 - (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of one or more phenolic compounds in the test sample.

- 22. (Withdrawn) An Isolated polynucleotide consisting of a nucleotide sequence selected from the group consisting of SEQ ID NOS. 1 7, and complementary sequences thereof.
- 23. (Withdrawn) A polynucleotide vector comprising the polynucleotide according to claim 22.
 - 24. (Withdrawn) A host cell containing the vector of claim 23.
- 25. (Previously presented) A method of detecting the presence of a phenolic compound selected from the group consisting of phenol, 2-chlorophenol, 2,4-dimethylphenol, 2-nitrophenol, 4-nitrophenol and 4-chloro-3-methylphenol in a test sample, comprising
 - (a) culturing a bacteria in the presence of the test sample, wherein the bacteria is selected from the group consisting of *Pseudomonas* and *Escherichia coli* and contains a reporter gene under the control of a promoter inducible by a mutant DmpR protein having at least a 4-fold enhanced transcriptional activation response to said phenolic compound relative to wild type DmpR, and
 - (b) detecting the expression of the reported gene,

wherein the expression of the reporter gene provides an indication of the presence of the phenolic compound in the test sample.

Claims 26-29 (Cancelled).